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#### **(54) Entertainment machines**

(57) A coin- or token-operated entertainment machine such as a fruit machine produces a symbol combination e.g. by random rotation of symbol-bearing reels (8) and a win indication is given if the combination is of a predetermined winning nature. There is also a **jackpot feature whereby prize value** is transferred between... separate jackpot displays (18a, 18b, 18c) as successive games are played. On attaining a jackpot win, the player can receive a prize corresponding to one or more of the jackpots. The jackpot displays may simulate movement of coins (21, 22) from one to the other of the jackpots (18a, 18b, 18c).

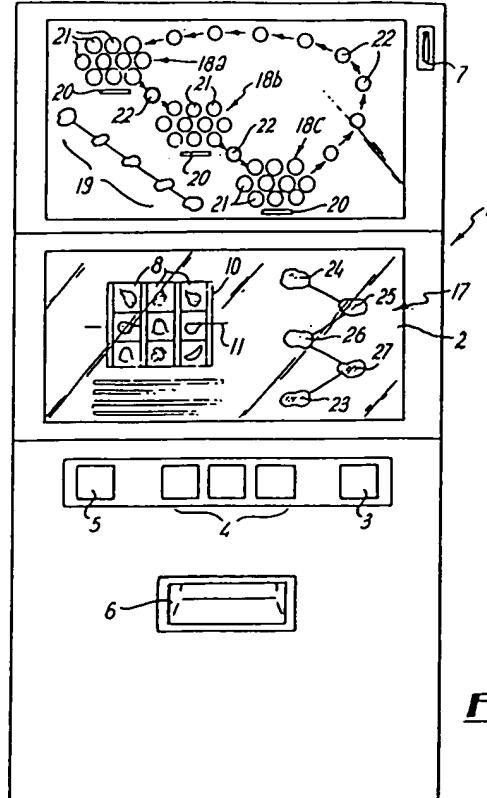


FIG. 1

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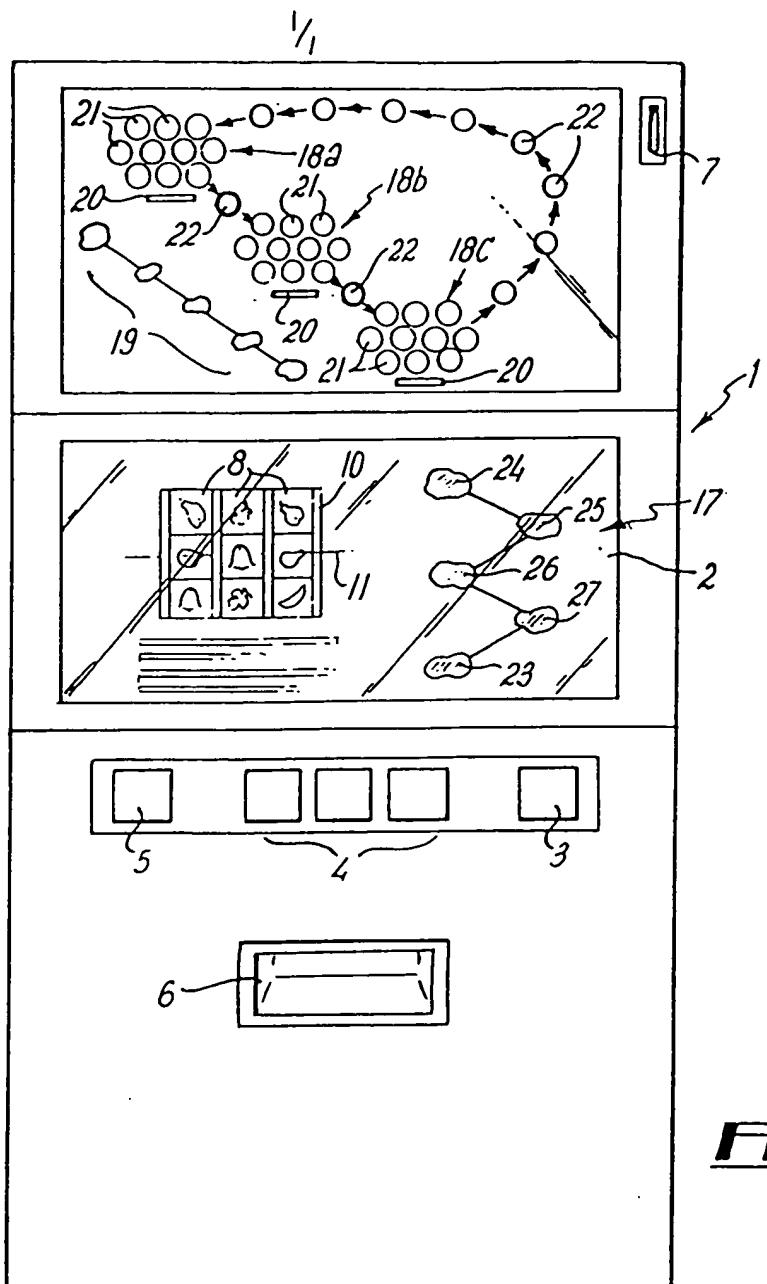


FIG. 1

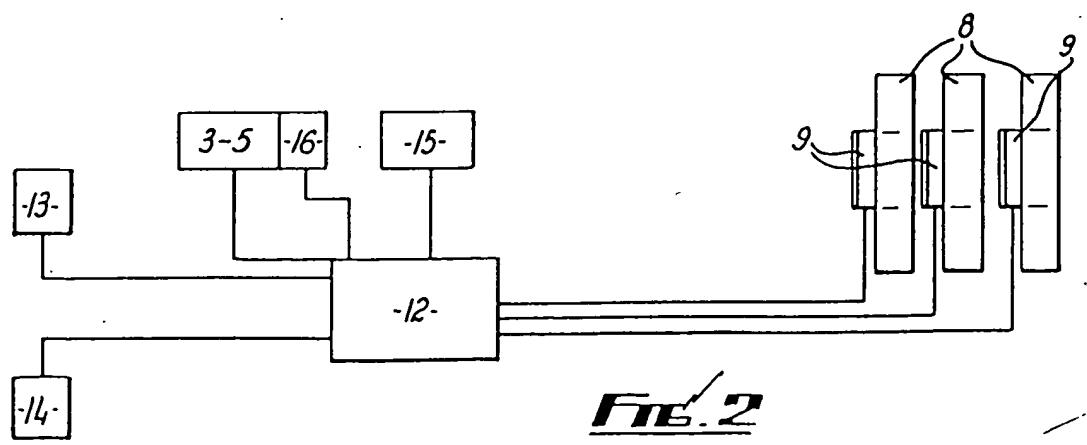


FIG. 2

## SPECIFICATION

## Entertainment machines

- 5 This invention relates to coin- (or token-) operated entertainment machines of the kind which is operable to play games resulting in the selection and display of combinations of symbols and with which a win indication is given in the event that a symbol

10 combination of a predetermined winning nature is obtained. The invention is more particularly, although not exclusively, concerned with such a machine which is a fruit machine and with which the displayed symbols (typically representations of fruit)

15 are selected at random, for example, by rotation of reels or by change of a video display simulating the rotation of reels.

With a view to promoting the entertainment value of fruit machines it is known to provide a jackpot

20 feature. With traditional mechanical fruit machines this customarily involves the provision of a mechanism which diverts occasional inserted coins into an exposed glass-fronted receptacle, the accumulated contents of the receptacle being discharged to

25 the player on attaining a predetermined jackpot symbol combination. With modern electronic fruit machines it is known to provide a display simulating this traditional jackpot feature comprising a number of representations of coins which are successively ill-

30 luminated to simulate the filling of a receptacle, a payout determined by the number of illuminated coin representations being made, and illumination of the representations being correspondingly extinguished, when a jackpot win is obtained. This

35 modern jackpot feature is commonly linked to an auxiliary display with which different display regions, such as letters of a word or sections of a path or ladder, are illuminated in correspondence with selection of auxiliary symbols such as numbers or

40 letters accompanying (e.g. printed over) the main combination symbols, the jackpot win being obtained for example when all letters of a word have been illuminated or illumination has progressed along a path or ladder to reach a jackpot indicator.

45 With this known jackpot arrangement two problems arise. Firstly, in so far as the accumulated jackpot prize value is carried forward at the end of each game and displayed prior to purchase and commencement of the next game, an element of predict-

50 ability is introduced which may be undesirable or unacceptable. Secondly, after payout of a jackpot prize the feature may be of little interest to the player until sufficient games have been played to give rise to the accumulation of an appreciable prize value.

55 An object of the present invention is to provide an entertainment machine having a jackpot feature and with which the above-described problems can be avoided or at least appreciably reduced.

According to the invention therefore there is provided a coin- (or token-) operated entertainment machine which is operable to play games resulting in the selection and display of combinations of symbols and with which a win indication is given in the event that a symbol combination of a predetermined winning

According to the invention therefore there is provided a coin-(or token-) operated entertainment machine which is operable to play games resulting in the selection and display of combinations of symbols and with which a win indication is given in the event that a symbol combination of a predetermined winning combination occurs.

also a plurality of jackpot displays between which jackpot prize value is transferred as successive games are played, and the arrangement is such that the player has the opportunity in at least some games

of achieving a prize award equal to the accumulated value of at least one of the jacket displays.

- With this arrangement it will be understood that additional entertainment value arises in that the player can observe the accumulation of prize value

75 occurring in one jackpot display by transfer from the other display or displays, but at the same time there is the possibility of avoiding undue predictability in so far as the player may not know in advance which jackpot prize value will be awarded should he

80 achieve a jackpot win. Moreover, following a jackpot win, player interest can be maintained since it is feasible immediately to reset the jackpot displays so that appreciable prize value is again available for award. In this respect, it is to be understood that the jackpot

85 arrangement of the invention relies essentially on the re-distribution rather than overall accumulation of prize value whereby the total prize value can be maintained at an appreciable level at all times. Indeed, and in accordance with a preferred embodiment of the

90 invention the overall prize value may be maintained constant or substantially constant at all times.

Conveniently there may be three separate jackpot displays although any suitable number may be provided as desired. The displays may comprise simulated coin receptacles, numerical displays or any other suitable display or combination of displays.

The arrangement may be such that transfer occurs at the start or end of a game or during the course of a game on a regular predictable basis or at random or in response to selection of a predetermined symbol.

- 100 In response to selection of a predetermined symbol or combination of symbols as desired. Transfer may involve simulated movement, e.g. of a coin, from one to another of the jackpot displays. Transfer may occur in a predetermined direction and in a predetermined manner. In a particularly preferred embodiment transfer occurs from display to display in a predetermined order until an end display is filled. The displays may then reset or, alternatively, transfer may then occur from the filled display back to the other display or displays either moving in reverse or continuing around a loop.
  - 105
  - 110

The jackpot prize value may be a value of coins (or tokens) or may constitute one or more game features (such as fruit machine "hold" or "nudge" steps) or any other suitable award.

Award of jackpot prize value may be made available in response to selection of a predetermined symbol combination. Alternatively the jackpot feature may be linked to an auxiliary display whereby

- 120 it is necessary to reach a predetermined position on a ladder or path or to illuminate a word or the like, by attaining successively appropriate auxiliary symbols accompanying the main symbol display, in order for a jackpot prize award to be made available. Alternatively or additionally the jackpot prize award may be made available on a random basis.

When made available the appropriate jackpot value may be awarded automatically. Alternatively it may be necessary for the player to take appropriate action, for example, by pressing a jackpot payout

button and in this case an element of skill or choice may be introduced in that, for example, the jackpots and/or different combinations of the jackpots are made available in turn and the player has to press the 5 button at the appropriate instant to obtain a desired payout.

The machine of the invention is preferably a fruit machine of the kind described above.

The invention will now be described further by way 10 of example only and with reference to the accompanying drawings in which:-

*Figure 1* is a diagrammatic view of the front of one form of an entertainment machine according to the invention; and

15 *Figure 2* is a schematic circuit diagram of the machine.

The entertainment machine shown in the drawings is a fruit machine and comprises a floor-standing box-shaped housing 1 having a front wall which includes a screen-printed glass sheet 2 and, below this sheet 2 a series of operating buttons including a start 20 button 3, hold/nudge buttons 4, and a jackpot button 5. The front wall also contains a payout opening 6 and a coin slot 7.

25 Within the housing there are three axially aligned reels 8 having, say, 20 symbols (such as pictures of fruit) at regularly spaced positions around their peripheries. The reels 8 are axially rotatable and are drivably connected to respective stepper motors 9. The 30 reels 8 are arranged behind a window 10 defined by a printed region of the glass panel 2. Each reel 8 can be arrested, by the respective stepper motor 9, in any of 20 stopping positions in which one symbol is in precise registration with a horizontal win line 11 in the 35 centre of the window 10 and two further symbols are visible above and below the win line 11.

The stepper motors 9 are connected to a micro-processor-based control unit 12. This control unit 12 is also connected to a coin mechanism 13, a payout 40 mechanism 14, the buttons 3-5, various lamps 15 behind printed display regions of the panel and lamps 16 in the buttons 3-5.

The panel 2 bears printed matter additional to the window 10 including the following:-

45 information relating to the playing of the game including details of awards which can be achieved; an auxiliary display constituting a ladder 17; three jackpot displays 18 (indicated 18a, 18b, 18c); a series of display indicators 19 alongside the displays;

a "double" indication 20 beneath each display 18.

The jackpot displays 18 constitute three sets of 10 representations 21 of coins linked by a circular path made up of further representations 22 of coins.

55 In use, when the machine is first switched on, selected ones up to half in total (preferably half i.e. 15) of the coin representations 21 are back-illuminated. The illuminated representations 21 are distributed between the three displays 18 (e.g. say 60 five in each). This start-up procedure, as in the case with the subsequent game playing procedure yet to be described, is controlled by the control unit 12 in accordance with a game programme stored in ROM memory addressed by the microprocessor of the 65 unit.

When the player inserts coins into the coin mechanism 13 through the coin slot 7 sufficient to generate credit for one or more games, the machine is actuated such that a game can now be played. In con-

ventional manner the player can press the start button 3 to cause the reels 8 to rotate and come to rest after different respective random periods of time so as to display a selected symbol combination on the win line 11. At random at the start of some games 75 the player is given the opportunity of arresting one or more reels 8 against rotation by pressing one or more hold/nudge buttons 4. At random at the end of some games the player is given the opportunity of stepping one or more reels 8 through one or more steps by pressing one or more hold/nudge buttons 4.

At the end of the game the combination of symbols on the win line 11 is known by the control unit 12 since the original starting position of the reels 8 and the number of steps through which each reel has 85 rotated is known (because each stepper motor 9 is driven by a counted number of impulses fed from the control unit 12). If the final combination is of a predetermined winning nature corresponding to a payout, the payout mechanism 14 is appropriately 90 actuated.

One or more symbols on the periphery of each reel is overprinted in conventional manner with a number. Initially (e.g. when credit is first accumulated by insertion of coins), the bottom "rung" 23 of the 95 ladder 17 is illuminated. At the end of a game the illumination moves up the ladder, in conventional manner, in correspondence with the value of any overprinted number which is on the win line 11. On reaching the top of the ladder 17 the illumination re-

100 turns to the bottom "rung" 23. The top four positions 24-27 on the ladder correspond to jackpot features. If the top position 24 is illuminated, the player can press the jackpot button 5 and a payout equal to the total contents of all jackpot displays 18 is made (e.g. 105 15 coins). If the next position 25 is illuminated the indicators 19 alongside the displays 18 are illuminated slowly in sequence and the player can press the button 5 at the appropriate instant to obtain a payout equal to the contents of a selected one of the displays 110 18 (i.e. that display 18 which has the corresponding indicator 19 illuminated). If the next position 26 is illuminated the player can again press the button 5 to obtain payout equal to the contents of one of the displays 18 which has a corresponding indicator 19 il-

115 luminated but the sequencing of the illuminated indicators 19 occurs rapidly so that skill must be exercised in order to select a desired display 18. If the position 27 is illuminated one display 18 is selected at random for payout purposes.

120 In randomly selected occasional games the "double" indicators 20 are illuminated. Any jackpot payout made in relation to a display 18 corresponding to an illuminated "double" indicator 20 is of a value equal to double the contents of that display 18.

125 At appropriate occasions, e.g. at random or at the start or end of each game, the contents of the displays 18 are redistributed. On each such occasion there is a change representing movement of one or more coins. Movement may occur successively 130 display 18a to display 18b to display 18c.

